

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 13, 27, and 31 are amended to include the features of now canceled Claim 3. No new matter is added. Claims 3 and 15 are canceled without prejudice or disclaimer, and Claims 6, 7, 18, 19, and 34 were canceled previously.

In the outstanding Office Action, Claims 1-5, 8-17, 20-24, 26-33, 35, and 36 were rejected under 35 U.S.C. § 103 as obvious over Amemiya et al. (U.S. Patent Pub. US 2002/0106212, hereafter "Amemiya") in view of an admission in the detailed description and further in view of Akiyama (U.S. Patent No. 4,956,677, hereafter "Akiyama"). Claim 25 was rejected under 35 U.S.C. § 103 as obvious over Amemiya in view of Applicant's admission and Akiyama and further in view of Hiroshima (EP Patent Pub. EP 0738938, hereafter "Hiroshima").

Regarding the rejection of Claim 1, that rejection is respectfully traversed by the present response on the grounds that a person of ordinary skill in the art would not have been be motivated to combine the features of Amemiya with those of Akiyama to realize the invention of amended Claim 1.

Amended Claim 1 recites, in part:

wherein the brush member comprises a conductive material and a fiber material that is positively chargeable when rubbed with the toner particles,

wherein the brush member is configured to be driven to rotate by rotation of the member, and

wherein the brush member has a resistance value between  $1 \times 10^3 \Omega$  and  $1 \times 10^8 \Omega$ .

The outstanding Office Action acknowledges that Amemiya does not disclose a brush member configured to remove negatively charged toner particles from a member, fiber material that is positively chargeable when rubbed with toner particles, and that the brush

member has a resistance value between  $1 \times 10^3 \Omega$  and  $1 \times 10^8 \Omega$ .<sup>1</sup> The outstanding Office Action relies on Applicant's admission that nylon is a member with a positive charging series and on Akiyama for the feature of a brush member that is positively chargeable.<sup>2</sup>

Applicant respectfully submits that a person of ordinary skill in the art would not have been motivated to combine the teachings of Amemiya with those of Akiyama to produce the brush recited in amended Claim 1. Rather, Akiyama teaches away from such a combination.

As shown in Akiyama, Fig. 1, a brush (13) is positioned below a photosensitive drum (1). The brush (13) rotates in direction (B) while the photosensitive drum (1) rotates in direction (A). Direction (A) and direction (B) are both depicted as rotation in the clockwise direction. As the brush (13) and photosensitive drum (1) are in contact with each other, the brush (13) must be driven by a source other than by the photosensitive drum (1), otherwise, the brush (13) would rotate in the counterclockwise direction. In other words, the surface of the photosensitive drum (1) closest to the brush (13) moves in a direction opposite to the direction of movement of the proximate surface of the brush (13). Such cross-rotation is important to the cleaning effect described in Akiyama. Akiyama states:

Since the conductive brush filaments 13a are rotated in the direction indicated by an arrow mark B in FIG. 1 and are **slidably contacted with the surface** of the organic photoconductor, toner powder T which is contacted with the conductive brush 13 is electrostatically attracted to the surface of the conductive brush 13a and removed from the organic photoconductor due to the fact that a positive bias voltage is applied to the conductive brush 13.<sup>3</sup>

Accordingly, Akiyama requires sliding contact between the brush (13) and the photoconductive drum (1) and discourages allowing the brush to be driven by the photosensitive member.

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<sup>1</sup> Outstanding Office Action, p. 4.

<sup>2</sup> Id.

<sup>3</sup> Akiyama, col. 7, lines 40-46. (Emphasis added).

Conversely, Amemiya describes a brush which rests on top of a charge roller and rotates due only to the driving force of the charge roller. Amemiya states:

The brush roller 12 is configured such that the brush 20 contacts the surface of the charge roller 2 due to the weight of the brush roller 12. The charge roller 2 in rotation causes the brush roller 12 to rotate in a direction indicated by an arrow G in FIGS. 1 and 2.<sup>4</sup>

Amemiya further states:

As stated above, the brush roller 12 is not driven by a drive source, but is driven by the charge roller 2. This obviates the need for an exclusive drive source and thereby simplifies the configuration of the cleaning device 18 while reducing the cost. In addition, **the brush 20 does not contact the surface of the charge roller 2 with an excessive force, protecting the surface from wear.**<sup>5</sup>

Applicant respectfully submits that the above statements show that the description of brushes of Amemiya and Akiyama would be considered by one of ordinary skill in the art to teach away from each other.

MPEP § 2141.02(VI) states “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Accordingly, Applicant respectfully submits that a person of ordinary skill in the art would not have looked to combine the independently driven the brush (13) described in Akiyama with the brush driven by the charge roller itself described in Amemiya.

Moreover, Applicant respectfully submits that if the brush of Akiyama were used in combination with the apparatus of Amemiya, the result would not be the invention recited in amended Claim 1. Rather, because the principle of operation of the brush (13) described in Akiyama requires sliding contact with the photoconductive drum, the brush would rotate so

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<sup>4</sup> Amemiya, p. 2, paragraph [0025].

<sup>5</sup> Amemiya, p. 2, paragraph [0028]. (Emphasis added).

as to slidably contact the member, thus controverting the “driven to rotate by rotation of the member” element of amended Claim 1.

Accordingly, Applicant respectfully submits that amended Claim 1 and Claims 2, 4, 5, 8-12, and 35, depending directly or indirectly therefrom, patentably distinguish over the cited references for at least the reasons discussed above.

As independent Claims 13, 27, and 31 are amended to include the same features discussed above regarding amended Claim 1, Applicant further respectfully submits that amended independent Claims 13, 27, and 31 patentably distinguish over the cited references for at least the reasons discussed above regarding amended Claim 1.

Regarding the rejection of Claim 25 as obvious over Amemiya in view of Applicant’s admission and Akiyama, and further in view of Hiroshima, Applicant respectfully submits that Hiroshima does not remedy the deficiencies discussed above regarding Amemiya and Akiyama. Rather, Hiroshima discloses bristles dispersed with micro-particles of carbon black which would not be positively chargeable when rubbed.<sup>6</sup>

Claims 14-17, 20-26, and 36 depend, directly or indirectly from Claim 13 and patentably distinguish for at least the same reasons as amended Claim 13. Claims 28-30 depend, directly or indirectly from Claim 27; and Claims 32 and 33 depend, directly or indirectly, from Claim 31. Accordingly, Applicant respectfully submits that Claims 28-30 and Claims 32 and 33 patentably distinguish over the cited references for at least the same reasons as the claims from which they depend.

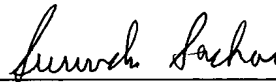
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<sup>6</sup> Hiroshima, col. 24, lines 11-18.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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